Biennial Report
Fiscal Years 2003 & 2004

Jeffrey R. Vonk | Director



Iowa Department of Natural Resources

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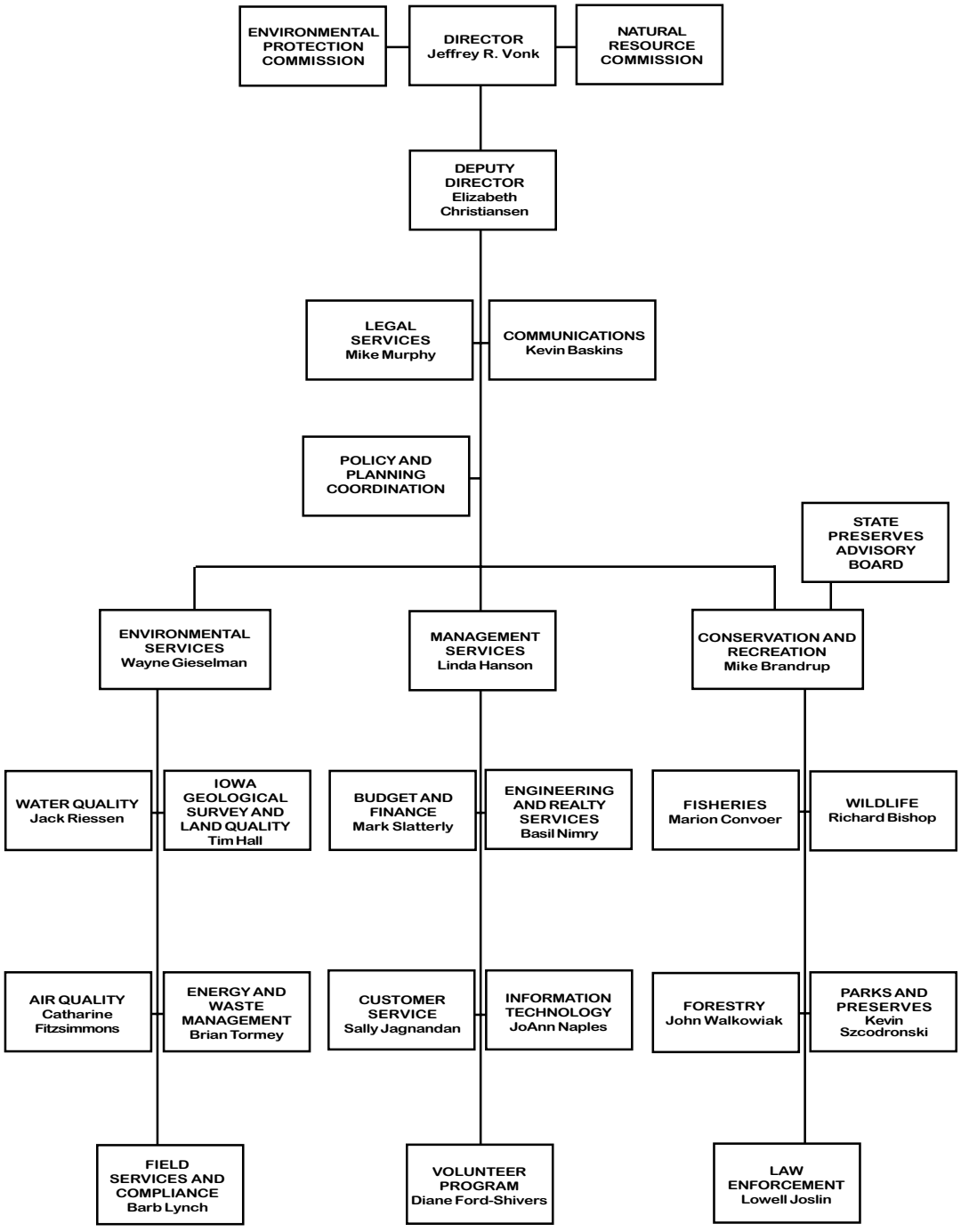
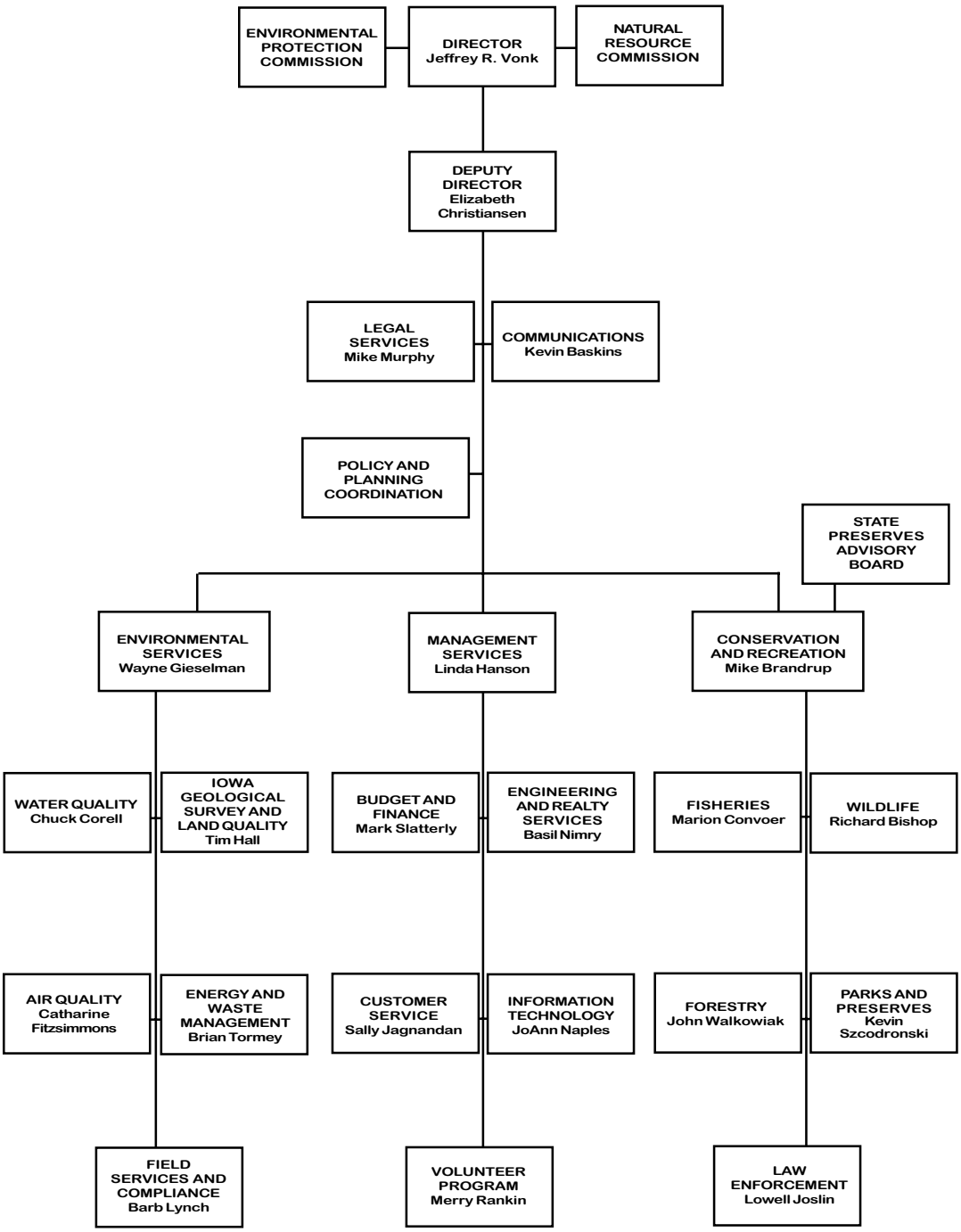


Organiztional Chart 2004



Commission

2003

ENVIRONMENTAL PROTECTION COMMISSION

Jerry Peckumn, Jefferson
Lisa Davis Cook, West Des Moines
Lori Glanzman, Mount Pleasant
Darrell Hanson, Manchester
Kathryn Murphy, LeMars
Gary C. Priebe, Algona
James Tobin, New Market
Terrance Townsend, Newton
Rita Venner, Breda

NATURAL RESOURCE COMMISSION

Paul Christiansen, Mt. Vernon
R. Kim Francisco, Lucas
Randy Duncan, Des Moines
Carol Kramer, Newton
Janice Marcantonio, Council Bluffs
Joan Schneider, Okoboji
William Sullivan, Cantril

PRESERVES ADVISORY BOARD

Jeffrey Vonk, Indianola
Scott Moats, Westfield
Laura Jackson, Cedar Falls
Timothy Sproul, Missouri Valley
Kathy Gourley, Johnston
Robin Fortney, Des Moines
Neil Bernstein, Cedar Falls

2004

ENVIRONMENTAL PROTECTION COMMISSION

Donna Buell, Spirit Lake
Lisa Davis Cook, West Des Moines
Lori Glanzman, Mount Pleasant
Darrell Hanson, Manchester
Kathryn Murphy, LeMars
Heidi Vittetoe, Washington
Jerry Peckumn, Jefferson
Terrance Townsend, Newton
Francis Thicke, Fairfield

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Randy Duncan, Des Moines
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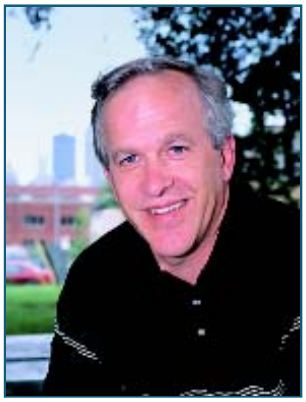
Robin Fortney, Des Moines
Neil Bernstein, Cedar Falls

Director's Message



Jeffrey Vonk

By far, the most valuable asset we have in the Iowa Department of Natural Resources is our people. Collectively, we have a highly educated professional staff in which more than 75 percent hold college degrees including 22 percent that hold either masters or doctorate level education primarily in the scientific, engineering and conservation fields.

Even more importantly, it is a highly motivated and dedicated staff, bringing not only expertise, but also enthusiasm to the protection of Iowa's natural resources. These are people who enjoy what they are doing and it shows.

The DNR benefits from the experience of our staff. More than three-fourths of our people have more than five years experience and more than a third have more than 20 years.

This report of the accomplishments of the DNR during fiscal years 2003 and 2004 is a reflection of the dedication and experience DNR employees bring to the mission of protecting and enhancing Iowa's natural resources. For the most part, this dedicated staff is most comfortable when they are in the field, working directly with the people and the natural resources to improve our environment.

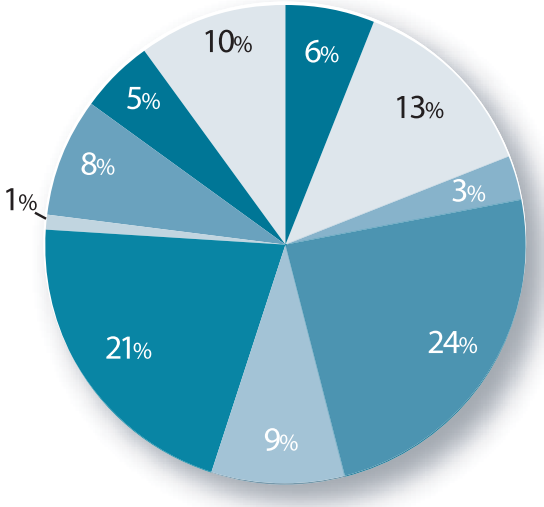
But as with virtually every job, comes the inevitable paperwork. While many of our people are experts in the field of conservation and natural resources science, doing the necessary paperwork is often a less natural, less comfortable environment for them. At the same time, we as a department recognize that the permit may be the important element to many of our customers in business and industry.

Starting in 2003, the DNR has made a concentrated effort for continuous process improvement. One of the strategies we are using is a concept called "Kaizen" that focuses on continuously improving the process of work flow to achieve additional efficiency. In our very first Kaizen event held in the summer of 2003 for air construction permits, we reduced the number of steps in the process from 23 to 7 and the number of handoffs between employees from 18 to 4, both representing 70 percent reductions. A backlog of 600 permits was eliminated in six months. And, most importantly, the process time was reduced from 62 days to 12, an 81 percent improvement. All of this was accomplished without reducing protections to the environment.

Since that time, we have maintained our focus on continuous improvement throughout the department by holding similar events for other processes, realizing that this is good for us and good for the citizens of Iowa. DNR employees are constantly faced with the challenge of doing more with less and we do not anticipate that changing anytime soon. Improving processes through programs like Kaizen not only makes us more effective for the people we serve, but also allows our people more time to do what they do best – protect and improve Iowa's quality of life through its' natural resources

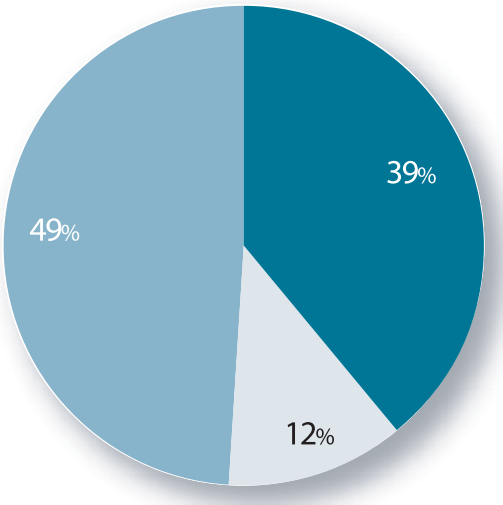
Jeffrey R. Vonk
Director

FY03 expenditures



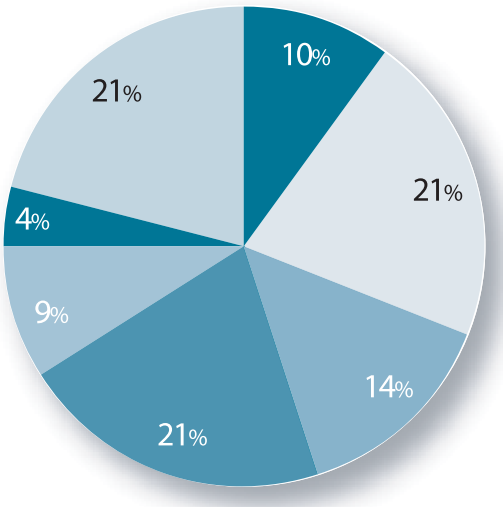
Department of Natural Resources
Funding Sources
$123,283,068

- General 13%
- Tire Fund 1%
- Tobacco 3%
- Environment 8%
- Federal 24%
- Contaminant 5%
- Other 9%
- Groundwater 10%
- Fish & Wildlife 21%
- REAP 6%



Sources of Funds For
Operations
$84,449,866

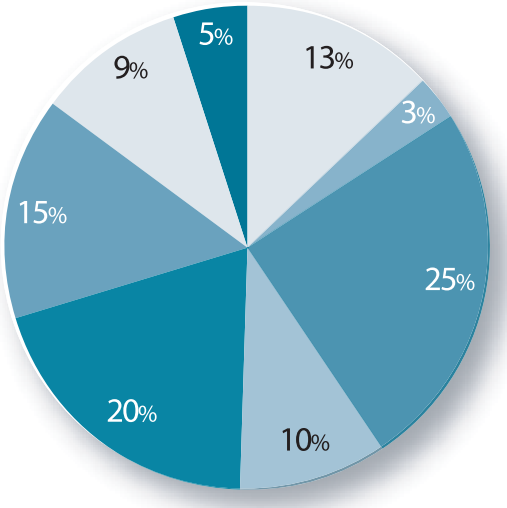
- Environmental Protection 39%
- Administration 12%
- Conservation and Recreation 49%



Sources of Funds For
Capital & SpecialPurpose Budget
$38,833,202

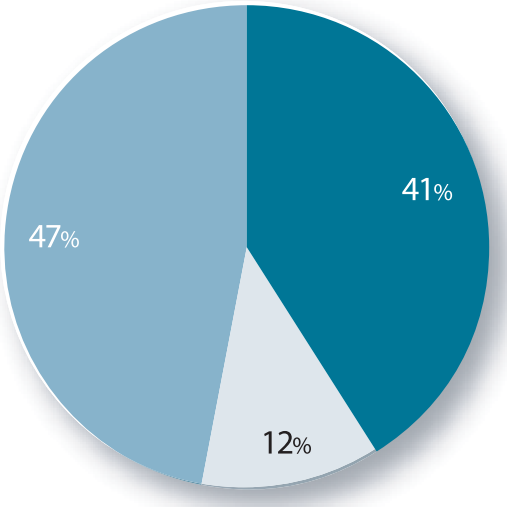
- Other 10%
- Tobacco 9%
- Environment 21%
- Tires 4%
- Fish & Wildlife 14%
- REAP 21%
- Groundwater 21%

FY04 expenditures



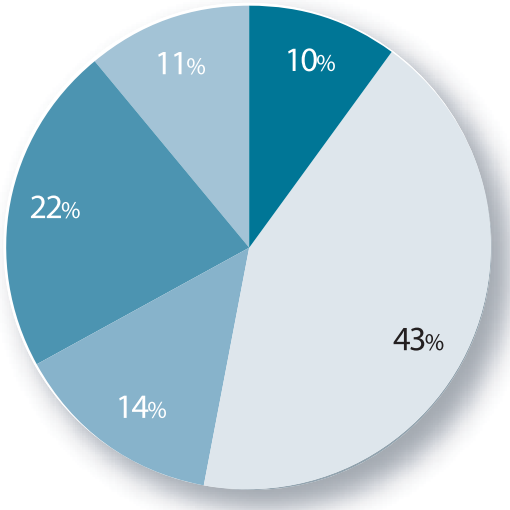
Department of Natural Resources
Funding Sources
$127,437,127

- General 13%
- Fish & Wildlife 20%
- Tobacco 3%
- Environment 15%
- Federal 25%
- Groundwater 9%
- Other 10%
- Air Contaminant 5%



Sources of Funds For
Operations
$88,979,602

- Environmental Protection 41%
- Administration 12%
- Conservation and Recreation 47%



Sources of Funds For
Capital & SpecialPurpose Budget
$38,457,525

- Other 10%
- Groundwater 22%
- Environment 43%
- Tobacco 11%
- Fish & Wildlife 14%

Environmental Services

Water Quality

Nonpoint Source Pollution

The DNR continued its efforts to reduce nonpoint source (NPS) pollution by working with the Division of Soil Conservation of the Iowa Department of Agriculture and Land Stewardship, the Natural Resources Conservation Service, Iowa State University, and other state and local groups and agencies to sponsor watershed protection projects, demonstration projects and information and education programs.

An important part of the DNR's nonpoint source program involves voluntary pollution control project in watersheds throughout the state. The DNR receives approximately $5.3 million annually under U.S. Environmental Protection Agency's (EPA) Section 319 nonpoint source pollution control program. During FY04, the DNR contracted with sponsoring agencies and organizations for 54 nonpoint source pollution control projects, with a value of $4.9 million. Of this $3.4 million was provided to watershed protection projects, of which $2 million went to projects addressing watersheds with waterbodies identified on Iowa's list of impaired waters. The majority of these watershed projects are sponsored by the local soil and water conservation district, with funding provided to promote best management practices aimed at reducing the amount of soil, nutrients and pesticides reaching Iowa's streams and lakes. An additional $458,000 was provided to support assessment of the impaired waters and development of total maximum daily loads (TMDLs) for such.

Through changes in the rules for the Clean Water State Revolving Fund, a new source of low-interest financing was created in 2003. Four new set-aside funds were established to target non-point source pollution. The first program created out of the set-asides was the On-site Wastewater Systems Assistance Program (OSWAP). In 2003, 82 loans totaling $449,027 were provided to rural homeowners to upgrade inadequate septic systems. In 2004, 113 loans totaling $647,068 were made.

The second program, the Local Water Protection Program, is administered through the Iowa Department of Agriculture and Land Stewardship. Funding of $3 million for low-interest loans targeted to soil erosion and sediment control practices was set aside. Two additional programs for livestock water quality facilities and general non-point source projects were under development in 2004.

Animal Feeding Operations

Major legislative changes in 1995 and 1998 greatly expanded the DNR's regulatory role regarding animal feeding operations (AFOs). Senate File 2293, which became effective in April 2002, once again placed more requirements on confinement feeding operations, including lowered permit thresholds; increased county oversight through the use of a matrix to evaluate environmental, social and community impacts; prohibitions on floodplain construction; use of a phosphorus index for manure application; increased separation distances; annual approval of manure management plans; and manure management plan filing fees. During the latter part of 2002, Department staff began the process of developing administrative rules to implement these and other statutory requirements, working with various stakeholders representing a variety of interest groups.

As part of the DNR's AFO program, construction permits are needed for animal feeding operations greater than a certain size. During FY 2003, 94 AFO construction permits were issued, and 70 were issued in 2004. Most of the permits were for swine confinement operations. The DNR also investigated 332 complaints associated with AFOs in 2003 and 340 in 2004.

In addition to the numerous confinement feeding operations (those under a roof and not exposed to rainfall), Iowa has a number of open lots, primarily for dairy and beef operations. Most of the larger open lots were not in compliance with the requirement for operation permits and the Department worked with the EPA, Iowa Cattleman's Association and

environmental groups to develop a plan to bring open lots into compliance. Under the approved plan, nearly 1,600 open lots registered their operations and the Department began the task of assessing environmental risk of each lot so the highest risk lots could be targeted for the initial compliance efforts. The Department expects that by April 2006, most open feedlots will have been brought into compliance with applicable standards and regulation to control the runoff of pollutants. During FY03, three operating permits were issued for open feedlots. In FY04, nine operating permits were issued for such facilities.

Discharge Permits

The discharge permit program of the DNR limits the amount and concentrations of pollutants released into streams and rivers. Iowa has more than 1,500 facilities such as municipal wastewater treatment plants and industries that discharge wastes into waters in accordance with DNR-issued discharge permits. Permit holders are required to monitor wastewater effluent and the DNR reviews the monitoring data to ensure permit limits are not exceeded. During FY03, 176 permits were issued or renewed, and In FY 04, 184 permits were issued or renewed. In 2001 a general permit was also issued for discharges from mining and quarry operations. Approximately 6 and 18 facilities were issued authorizations to discharge under this permit in FY03 and FY04 respectively.

The DNR also continued to carry out an industrial pretreatment program. Conventional wastewater treatment methods typically are not effective in removing industrial pollutants such as metals. The pretreatment program is designed to reduce the amount of pollutants industries discharge to municipal wastewater treatment systems. Twenty-one Iowa cities had pretreatment programs limiting the discharge of industrial pollutants to their wastewater plants.

Wastewater Treatment

The DNR has regulatory responsibilities for wastewater treatment plants from the planning stage through the operating lifetime of the plant. Plans for new facilities and modifications to existing plants are reviewed by the DNR and construction permits issued. During 2003, construction permits were issued for 137 facilities. During 2004, 132 permits were issued. In addition to ensuring wastewater plants are properly designed and constructed, the DNR also makes sure facilities are properly operated by administering the wastewater operator certification program.

The DNR provides financial assistance to upgrade or replace wastewater facilities through a low-interest revolving loan program. In 2003, more than $45.4 million in financial assistance was provided to 25 cities under this revolving loan fund. For 2004, more than $37.7 million was provided to 24 cities.

Water Quality Standards

Water quality standards (WQS) ensure that surface water is safe for swimming and drinking, and can support healthy, diverse aquatic populations. States are required to periodically review their standards to identify needed changes. In 1999, the DNR began a comprehensive review of Iowa's water quality standards and this review continues today. For all the changes, complete or in progress, input was sought from the public, EPA, and the technical advisory group to assist the DNR in identifying and working out needed changes. As a result, several changes to the WQS have been published and adopted since 1999. The third phase of changes was published and adopted in 2003. These changes revised the recreational use designations and updated the Surface Water Classification document. The completion of the fourth phase which includes total dissolved solids/chloride changes and additional revisions to the Surface Water Classification is still in progress. Also, additional rule making was initiated in 2004 to establish protocol in assessing Iowa's cold water aquatic resources. The DNR anticipates additional water quality standards revisions will continue into 2005 and 2006.

Water Supply

The DNR is responsible for ensuring Iowa's 2,000 public drinking water supplies provide drinking water that meets all state and federal drinking water standards. Municipalities, rural water systems, subdivisions, factories, schools, restaurants, and convenience stores all are types of public water supplies. Iowa's public drinking water program originated in the 1920s and continues to expand due to new rules initiated by the reauthorization of the federal Safe Drinking Water Act (SDWA) in 1996.

Public water supplies are required to monitor drinking water for acute contaminants that can cause immediate adverse health effects – such as nitrate and coliform bacteria,

and for chronic contaminants that can cause long-term adverse health effects – such as heavy metals, radionuclides, and pesticides. More than 100 contaminants currently are monitored by community water supplies. In calendar years 2003 and 2004, there were no waterborne disease outbreaks or deaths attributed to drinking water from Iowa's regulated supplies. During 2003, 92 percent of the public water supplies complied with all health-based standards, while 81 percent were in full compliance with monitoring and reporting requirements. {As of this writing, 2004 data is not yet available.} Public water supplies not in full compliance during the year were required to return to compliance and notify the public of the violations and possible health ramifications.

The requirements to compile and distribute an annual consumer confidence report were met by 98.5% of the 1,154 community water systems in 2003 and by 98.4% of the systems in 2004. For each system, the report includes the source of the drinking water, detected contaminants, any violations of standards, and ways the public can become involved with the specific water system.

There were several new or significantly modified federal rules adopted in Iowa during 2003 and 2004: arsenic rule, radionuclide rule, public notification rule, long-term 1 enhanced surface water treatment rule, filter backwash recycle rule, and lead & copper rule. New rules in the implementation phase during 2003 and 2004 included the disinfectants/disinfection by-products rule and the interim enhanced surface water treatment rule. In addition to making presentations at various technical seminars during 2003 and 2004, DNR staff conducted several workshops during 2003 to train over 1,100 water supply operators in the new rule requirements.

In 2004, the four-year project to delineate the groundwater and surface water sources for all 2,000 public water supplies was completed. In addition to the delineation, an inventory of the possible contamination sources in the delineated areas was also provided to each specific water supply. All of the systems are now encouraged to each develop their source water protection plan.

The drinking water state revolving loan fund provides low-interest loans for the construction and improvement of public water treatment facilities and infrastructure. In 2003, 17 water improvement projects were approved with loan requests totaling $37,289,000. During 2004, 26 applicants requested a total of $36,452,000 in loan funds for water infrastructure projects. Since the program's inception in 1997, the department has approved loan requests of more than $208,000,000 for the improvement of public water supplies in Iowa.

As part of ensuring drinking water standards were met by Iowa's public water supplies, the DNR issued 1,496 new or revised operation permits in 2003 and 1,251 in 2004. In 2003, 607 construction permits were issued, with 648 issued in 2004. Sanitary survey inspections were conducted by the DNR and its county sanitarian contractors, with 542 water supply sanitary survey inspections in 2003 and 687 in 2004. Staff also provided technical assistance to the operators and public and investigated complaints. The DNR also administers certification programs for water treatment and distribution operators, well drillers/contractors, wastewater system operators, pump installers, and environmental laboratories. These programs are administered through the DNR's Water Supply Operations Section. In 2004, there were 200 laboratories certified to conduct environmental analyses in Iowa and 5,154 operator, water well contractor, and pump installer certificates.

Water Use

The DNR regulates the use, diversion, and withdrawal of surface and groundwater under state laws that ensure the state's water resources are put to beneficial use and are properly allocated. This program assures that large water users will not deprive individual homeowners and farmers access to water for normal domestic and livestock needs; that minimum stream flows are maintained to allow assimilation of wastewater discharges while protecting the aquatic environment; and prevents dewatering of aquifers [also called "mining" of aquifers] that could result in land subsidence and in compaction of aquifers that would reduce their future ability to transmit and store water.

In 2003, 141 new use/withdrawal permits were issued and another 305 were reissued or modified. In 2004, 144 new permits were issued and 321 reissued or modified. Additionally, 80 water use registrations were processed in 2003 and 39 in 2004. Registrations are required for minor, nonrecurring uses.

Private Well Testing, Plugging, and Rehabilitation

In 2003, the legislature transferred fiscal management of the Grant-to-Counties program and fund distribution to the Department of Public Health. The Department of Natural Resources continues to provide the technical resources for private well programs but does not distribute the G-to-C funding. The Department of Natural Resources tracks and documents well abandonment, well water testing and well renovation on an interactive internet-based database.

Under the Health Department, abandoned well plugging and private well water testing has proceeded at a similar pace as in previous years. During fiscal years 2003-2004, over 4000 wells were plugged, 15,000 water tests were performed on private drinking water wells and 335 private wells were renovated.

The need for this program continues to be strong and the results impressive. There have been about 47,000 wells plugged under the grant program since its inception. There have been about another 9000 plugged without use of the G-to-C funding. From abandoned farm census data and introduction of rural water in small communities we can estimate there could be more than 200,000 wells abandoned in Iowa since 1900 that will need to be plugged.

Air Quality

Iowa continued reporting daily air quality levels using the national Air Quality Index (AQI) to enhance the understanding of air quality, health effects and risks of exposure. The AQI is divided into categories with health descriptors corresponding to each air quality level.

Iowa is one of just 17 states that meet both the particulate and ozone smog standards statewide. Because of this, Iowans face relatively less adverse health effects compared to nearly 140 million Americans who live in more heavily polluted regions. This is a tremendous, but often overlooked benefit to life in Iowa.

The vast majority of days in Iowa fall into "good" to "moderate" air quality conditions for the most common pollutants. Several days of unhealthy air were experienced in both local and widespread geographical areas across Iowa. Particulate matter (soots and chemical aerosols) and ozone smog are the two most widespread and common pollutants of concern in Iowa among those monitored. An increase in the number of unhealthy days or the severity of pollution levels could trigger a non-attainment designation, requiring additional regulatory effort to reduce emissions.

Several air pollution advisories were issued during conditions of unhealthy air to allow citizens to take actions to protect their health, such as postponing exercise or other prolonged outdoor activity, especially for persons most at risk from symptoms and potential damage to heart and lungs. All of the information such as real-time data and weather forecast-like maps showing particulate and smog levels are available at www.epa.gov/airnow and other data at www.iowadnr.com.

Kaizen Business Process Improvement Event

In June of 2003, the DNR applied an intensive week-long "Kaizen" review, a business process improvement technique inspired by Japanese methods, to improve efficiencies in construction permitting. Now the time to issue standard permits has fallen 81 percent, with the average review time of 62 days reduced to 12, a permit backlog eradicated, and permit forms streamlined. In addition, applicants can call 1-877-AIR-IOWA before submitting an application to ensure everything is complete.

The whole effort focused on finding and eliminating unproductive time in permit processing and rapid implementation of ideas without sacrifices to actual time spent on review or environmental protection. Details are available at www.iowacleanair.com.

Air Permitting

Construction permit issuance time frames have reduced dramatically to less than 15 days,

and often 12-13 days, compared to 60 days in FY01-02 and compared to six months during the mid-1990s. This average does not include complex permits for major new facilities or expansions.

The DNR eradicated a permit backlog, initiated a toll-free help line 1-877-AIR IOWA, which is staffed by an engineer to immediately answer any construction permit question. (See Kaizen paragraph above)

Rural Air Quality

In order to protect the health of Iowans living near concentrated animal feeding operations, the DNR established a health effects standard for airborne levels of hydrogen sulfide gas. The standard is necessary to compare against monitored levels of hydrogen sulfide to determine the quality of air at homes, schools, churches and other public-use areas that meet the legislatively defined criteria of "separated location." The health standard will be the "bar" used to compare against monitoring data. Should gas levels risk public health, the state will develop plans and programs to reduce emissions, as required by the Legislature.

Vehicle Emissions

The DNR continued a voluntary vehicle cleanup program called the Smoking Tailpipe Program. Citizens can call 1-888-END-SMOG to report license numbers of Iowa vehicles with excessive exhaust. The vehicle owner is sent educational materials to help them make an informed decision about the benefits of vehicle maintenance as well as discount coupons from sponsoring auto repair shops and parts suppliers. The choice to make a repair is left to the owner. Mobile sources release more than half of all toxins into Iowa's air and even higher percentages of smog-forming gases. Excess smoke indicates mechanical malfunction and repairs often result in increased fuel economy, longer engine life and avoided costs for more extensive mechanical repairs if ignored.

The state continued a public-private partnership to reduce harmful diesel school bus emissions. Voluntary emission testing provided at no charge to the state or schools continued with nearly 93 percent of schools participating. Emissions data is given to the schools, so mechanics can target their attention on the highest-emitting buses. The effort is reducing emissions, saving fuels and helping districts avoid costly engine replacements and catching mechanical failures that are still under warranty. Emission reductions of 23 percent statewide were achieved.

Technical Assistance

The DNR continues to fund the Iowa Air Emissions Assistance Program (IAEAP) at the University of Northern Iowa. IAEAP offers technical assistance to help small businesses comply with air regulations. The department also funds the Air Quality Liaison for Small Businesses to assist small businesses in working with air pollution-related agencies. Local air control programs in Polk and Linn counties are funded in part by the DNR.

Emissions Inventory

The DNR completed a three-year emissions inventory effort to learn the quantity of emissions that enter Iowa's air and the sources of emissions. The effort continues, by updating the data in a third of the state each year by eastern, central and western Iowa. Nearly 200 substances are under study. The state is doing much of the work, estimating emissions from mobile sources, consumer product use and small but numerous area sources. About 600 medium-sized businesses were also sent a detailed inventory form. The state provides assistance to businesses to complete the inventory.

Energy & WasteManagemet

As an outcome of the department's streamlining and reorganization efforts, the Energy and Waste Management Bureau was formed in April 2002. Previously the bureau's programs and services were administered in two separate divisions of the department. The reorganization brought energy efficiency, pollution prevention, solid waste management, renewable energy, and related technical and financial assistance programs together as a single bureau within the newly formed Environmental Services Division. FY 2003 was the first full year that the bureau functioned within this new organizational structure, but FY 2004 brought about new changes when the Bureau internally reorganized to provide greater value to our clients.

Solid Waste Alternatives Program

The Solid Waste Alternatives Program (SWAP) provides forgivable, no-interest and low-interest loans for waste reduction, reuse and recycling projects. The funding source is a portion of the state solid waste tonnage fee that is remitted to the department and loan repayments.

In FY 2003 funding was awarded to 43 projects. Total amount of these awards was $2.4 million. A total of more than $2.7 million was issued during the fiscal year as financial assistance to SWAP contractors. Thirty-six percent of the total revenue of $3,252,698 received by the program was in the form of loan repayments. In FY 2004 funding was awarded to 38 projects out of 64 proposals received. The total request for SWAP funding was more than $6 million with $3.3 million awarded to local governments, business and industry and non-profit organizations. Forty-four percent of the total revenue of $3,419,674 received by the program was in the form of loan repayments. It is the goal of the department to structure the program so it can be self-sustaining.

Regional Collection Centers

Regional Collection Centers (RCC) are permanent facilities for the temporary collection, processing and storage of household hazardous materials and hazardous materials from conditionally exempt small quantity business generators. Satellite facilities serve the role of collection facilities within the RCC service area until the materials are transported to the main facility for processing, reuse or off-site disposal.

There were 13 main RCC facilities and 26 satellite facilities in operation in 2003 serving urban and rural households and eligible businesses in 59 Iowa counties. More than 2.4 million pounds of hazardous material were properly managed through the regional collection center program.

There were 16 main RCC facilities and 28 satellite facilities in operation in 2004 serving urban and rural households and eligible businesses in 66 Iowa counties. Nearly 2.5 million pounds of hazardous material were properly managed through the regional collection center program.

Toxic Cleanup Days

Toxic Cleanup Days (TCD) are one-day county events where urban and rural households can bring their household hazardous materials and farm waste for proper management. Toxic Cleanup Days are available to households and farms only in counties not currently served by a regional collection center or satellite facility. Nine TCDs were held in 2003. These events collected 72,000 pounds of hazardous materials from urban and rural households and farms.

Spring TCD events were cancelled due to lack of program funds. Three TCDs were held in the fall of 2004. These events collected 16,426 pounds of hazardous materials from urban and rural households and farms.

Pollution Prevention Services

Pollution Prevention Services formerly known as the Waste Reduction Assistance Program expanded its offerings to clients reflecting the addition of environmental management systems assistance and the Pollution Prevention Intern Program as well as changing its approach by establishing long-term client relationships. Pollution Prevention Services provides free, non-regulatory, confidential technical assistance to large Iowa

businesses and industries to reduce waste, prevent pollution and enhance operational efficiencies. Since 1990, Pollution Prevention Services has assisted 232 facilities and held 67 workshops for clients to assist them with ongoing waste reduction and pollution prevention efforts.

As a result of the department's reorganization, Pollution Prevention Services has successfully partnered with Rebuild Iowa, Iowa Industries of the Future, the Solid Waste Alternatives Program, the Iowa Waste Exchange as well as the Iowa Waste Reduction Center.

In 2003, Pollution Prevention Services assisted Iowa organizations by identifying $746,000 in potential cost savings and 410 cubic yards of solid and 76,629 pounds of hazardous waste reductions. Pollution Prevention Services identified water-saving measures totaling 1.8 million gallons and energy savings of more than 5.1 million kWh and 102,504 MMBtu for these clients.

In 2004, $951,686 in potential cost savings and 1,192 tons of solid waste and 1,652,670 pounds of hazardous waste reductions were identified by Pollution Prevention Services. Additionally, 11.3 million gallons worth of water-saving measures and energy savings of more than 4,065,289 kWh and 436.3 kW in demand charges were identified for these clients.

Pollution Prevention Intern Program

Results were received from the second and third years of the Pollution Prevention Intern Program. In FY 04, the Iowa Waste Reduction Center provided funding for two additional interns. Twenty-two students were matched to companies committed to facilitate operational improvements to accomplish a waste reduction goal. (*See the table on page 17.*)

Solid Waste Comprehensive Planning and Special Projects Team

The DNR assists cities, counties and sanitary disposal projects with preparing comprehensive plans. The plans describe plan participants' integrated solid waste management systems, waste reduction strategies and disposal methods. After an initial plan is approved, planning areas must update them at least every three years. Twenty plan updates were approved during the year. Part of updating is determining the amount of waste diverted since 1988. As of the end of the FY 2003, the state had achieved a 33 percent reduction in solid waste landfilled, which was higher than the national average (27 percent). Nineteen comprehensive plans were approved in FY 2004, however, a statewide average can not be calculated at this time due to a lack of a complete data set.

Waste Tires

The DNR's waste tires program works to clean up stockpiles and provide markets for the three million waste tires Iowa generates each year. In FY 2003, the $1.6 million funding that was appropriated for the program reverted back to the General Fund. The only waste tire related activity that took place was maintaining the waste tire storage and processing permit program and the waste tire hauler registration process.

In FY 2004, the department provided more than $240,000 to scrap tire end-users in Iowa for the use of tires chips as tire-derived fuel and as landfill leachate collection system aggregate. Also in FY 2004, the department registered two dozen scrap tire haulers, permitted four scrap tire processors and permitted one scrap tire stockpile facility.

Legislation passed in May 2004 provides funding of approximately $1 million per year through June 30, 2007, at which time the programs are scheduled to sunset legislatively. Funding is to be used to abate the largest remaining illegal stockpile, provide market development and education and awareness initiatives, and program administration and enforcement.

Solid Waste

The department issues permits to regulate the construction and operation of solid waste and disposal facilities. At the end of FY 2003, 298 solid waste management facilities had been permitted. The break down of the types of facilities is as follows:

- 95 operating landfills (including industrials)
- 59 closed landfills
- 32 solid waste transfer facilities
- 11 solid waste incinerators
- 42 land application permits
- 14 household hazardous materials collection facilities
- 9 permitted composting facilities
- 22 reuse (soil, wastes, exempt materials)
- 5 tire processing facilities
- 9 other facilities

During FY 2003, 4 permits were issued for new facilities and 24 permits were renewed. In

Actual Cost Savings and Pollution/Waste Reductions at Iowa Companies from Recommendations Implemented.

Categories	2003 Reduction	2003 Cost Savings	2004 Reduction	2004 Cost Savings
Water Conservation	97,801,000 gallons	$488,236	140,142,400 gallons	$ 32,065
Special and Solid Wastes	2,314 tons	$ 54,900	13,825 tons	$1,268,002
Hazardous Waste *	5,270 gallons	$100,730	32,185 gallons	$ 72,165
Energy Conservation	3,542,300 kWh	$176,723	7,090,733 kWh	$ 404,930
NOx Emission Reductions			157 tons	$ 594,300
Inventory System		$ 15,000		$ 98,000
TOTAL:		**$1,502,422**		**$2,469,462**

** Does not reflect savings from reduced purchase costs of hazardous chemicals*

Actual and Potential Cost Savings and Pollution/Waste Reductions for Iowa Companies from Recommendations Implemented and Suggested.

Categories	2003 Reduction	2003 Cost Savings	2004 Reduction	2004 Cost Savings
Water Conservation	9,500,000 gallons	$23,750	22,245,000 gallons	$ 168,410
Special and Solid Wastes	20,227 tons	$1,104,991	7,819 tons	$ 153,232
Hazardous Waste *	139,522 gallons	$1,564,640	80,850 gallons	$ 204,265
Energy Conservation	32,000 kWh/Btu	$ 3,800	7,215,977 kWh/Btu	$ 241,190
Inventory System		$117,000		$ 730,000
TOTAL:		**$2,814,131**		**$1,497,097**

** Does not reflect savings from reduced purchase costs of hazardous chemicals*

addition, 288 permit amendments were approved.

At the end of FY 2004, 342 solid waste management facilities had been permitted. The break down of the types of facilities is as follows: (these numbers include "exempt permit by rule" permits)

- 95 operating landfills (including industrials)
- 56 closed landfills
- 42 solid waste transfer facilities including citizen convenience centers
- 7 incinerators
- 44 land application permits
- 4 landfarm permits
- 11 household hazardous materials collection facilities
- 12 permitted composting facilities
- 26 reuse (soil, wastes, exempt materials)
- 5 tire processing facilities
- 20 other facilities
- 76 appliance demanufacturing permits

During FY 2004, 18 permits were issued for new facilities and 74 permits were renewed. In addition, 374 permit amendments were approved.

Building Energy Efficiency

The Building Energy Management program implements cost-effective energy management improvements in Iowa's public and nonprofit facilities. Since its inception in 1989, the program has implemented $180 million in energy improvements saving Iowans more than $197.5 million. By the close of FY 2004, the program has implemented nearly $200 million in energy improvements saving Iowans more than $223.5 million

The Iowa Energy Bank Program continues to assist the state's schools, hospitals, public and private colleges, and local government facilities in identifying and installing cost effective energy management improvements. The use of private funds in combination with minimal state and federal support continues to achieve substantial financial results for the state's public buildings. In FY 2003, Energy Bank clients implemented more than $2.2 million in improvements, with annual energy savings in excess of $151,000. Since FY 1988 has public facilities have implemented over $134 million in improvements with cumulative savings of nearly $118 million.

The State of Iowa Facilities Improvement Corporation (SIFIC), a nonprofit corporation, provides state agencies with lease-purchase financing for energy-efficiency improvements. In FY 2003, it saved state agencies and Iowa taxpayers more than $88 million as a result of more than $49 million in energy improvements. In FY 2004, it saved more than $98 million through more than $51 million in energy improvements.

Rebuild Iowa helps communities improve energy efficiency, promote community

development, and establish a path for economic and environmental sustainability by integrating local, state and federal resources. In FY 2003 Rebuild Iowa communities of Polk County, Centerville, Muscatine, Cedar Valley, Hamilton County and Maharishi Vedic City reported more than $1.6 million in implementations resulting in $165,781 in annual energy savings. In FY 2004 these communities implemented another $2.5 million in improvements. To date, Rebuild Iowa has leveraged $1.9 million in federal funding to implement $13.5 million in energy management improvements, saving more than $1.4 million annually.

Homegrown Energy

Transportation Fuels

The market share of ethanol-blend fuels continued to grow, rising above 62 percent of all gasoline sold in Iowa during 2003. Eight retail E85 (85 percent ethanol and 15 percent gasoline) stations were operating in Iowa in 2003 with 10 stations operating in 2004. In addition, eight stations owned by state facilities offered E85 for use in state vehicles in 2003, with seven stations offering the fuel in 2004. Iowa has more than 20,000 registered vehicles capable of using E85. The state vehicle fleet has more than 600 E85 vehicles, well ahead of state and federal requirements.

Biodiesel production facilities operated in Ralston and Sergeant Bluff in 2003, and a new facility opened in Milford in 2004. More than 150 stations in Iowa now sell biodiesel.

Wind

Wind energy continued its strong growth in Iowa in 2003. During 2003, a 98-MW wind farm came on-line in north-central Iowa and construction of a 43.5-MW facility was started in northwest Iowa for a total wind capacity of 423MW. Despite a six-month lapse in the federal wind production tax credit, wind energy continued growing FY 2004, bringing the state's total wind capacity to 472 MW. In addition, MidAmerican Energy began developing its 310-MW wind farm in Iowa.

Iowa schools continue to be national wind energy leaders. In 2003, two new school districts – Eldora-New Providence and Clarion-Goldfield – installed wind turbines. Iowa school districts now own nine wind turbines with a total capacity of 3.41 MW. The Spirit Lake Community School District is the first school district in the nation to own two wind turbines. The DNR's Iowa Energy Bank Program has facilitated and helped finance the installation of eight of the nine school turbines.

Biomass

The second of three planned test burns to co-fire coal with switchgrass at the Ottumwa Generating Station occurred in 2003 to acquire certified emissions data and analyze fly ash composition to ensure the continued acceptance by the Department of Transportation as a concrete strengthening agent for roads.

Work in 2004 included efforts to obtain an environmental permit from the DNR to conduct a long-term test burn of more than 25,000 tons of switchgrass in 2005 and analysis of fly ash composition.

Methane Energy Recovery

The DNR presented a one-day workshop for Iowa pork producers regarding the issues and benefits of methane recovery from hog waste.

The DNR assisted and will continue assisting MaxYield Cooperative with their efforts to study and potentially implement a community-based digester, servicing 80,000 to 100,000 feeder pigs, located within a four- to six-mile radius of Whittemore, Iowa.

Top Deck Dairy's methane recovery system is being updated to include a solids separator and under-floor forced air drying, enabling the dairy to use the digested solids as bedding. The 700-cow dairy farm near Westgate produces about 17,000 gallons of manure each day. Methane recovered from the manure fuels generating equipment to produce 950,000 kWh of electricity annually, enough to meet the energy needs of 100 homes.

Solar

The Department is collaborating with several organizations to install a 7200-watt solar array on a facility located in a brownfield economic re-development area. This project highlights sustainability concepts for the Bureau's involvement in redevelopment projects.

Iowa's Solar Energy initiative also competed updating *The Midwest Photovoltaic and Solar Thermal Yellow Pages*, which is a resource for individuals interested in incorporating solar energy in their home or business.

Geological Survey & land quality

Contaminated Sites

Many contaminated sites (properties known or suspected of having hazardous materials) were created years ago and the responsible businesses are no longer functioning. The DNR attempts to conduct preliminary screening of such sites to identify those posing the most serious threat to public health and the environment. The majority of the sites pose some threat, however, few qualify for placement on the National Priority List (NPL). In 2003, 52 sites had an initial site screening completed, four sites had an extended site screening completed, and one site was the subject of a preliminary assessment/site investigation. None qualified for NPL listing. In 2004, 39 sites had an initial site screening completed, four sites had an extended site screening completed, and no sites were the subject of a preliminary assessment/site investigation. None qualified for NPL listing.

The DNR's Land Recycling Program (LRP) also addresses contaminated sites. Enrollment in the program is voluntary, however, certain rules must be followed to successfully complete the program and receive the associated benefits. Forty-two sites are currently enrolled in the LRP. The DNR entered into a Memorandum of Agreement (MOA) with EPA for the LRP. This MOA effectively means that EPA agrees not to take action in cases where DNR has signed-off under the LRP.

More than 10 years ago, Iowa utilities and the DNR began the cleanup program of "coal tar" sites – a residue from power plants that once manufactured gas from coal. Many sites became significant depositories for the material. Twenty-seven sites are currently in this program. Eight coal tar sites are in the LRP program while five of these sites have completed the LRP program. The department also assists EPA in their oversight of other sites in Iowa.

Underground Storage Tanks

The underground storage tank (UST) section regulates 8,200 tanks containing petroleum and hazardous substances at 3,000 sites across Iowa. The section's goals are to prevent releases from occurring through improved inspections and to move high- and low-risk contaminated sites through assessment or cleanup into *No Action Required* (NAR).

The UST Program began in 1986 under the Groundwater Protection Act with registration of USTs. Technical standards to guide installation, operation, maintenance and permanent closure of USTs followed a year later.

A unique feature of Iowa's regulated tank program compared to other states is the issuance of annual tank tags. The tag color is changed each year and affixed to the fillport of the tank. The tags identify active, regulated tanks to the transporter who delivers the product. Transporters may not deliver to tanks that do not have a valid tag, such as temporarily closed tanks (tags not issued) or sites without UST insurance (tags revoked). Annual tank tags not only prevent unauthorized deliveries, it readily identifies the fillport so there is no mistaking a fillport from a monitoring well or any other receptacle.

More than 240 tanks were permanently closed in 2004, and 170 tanks were installed. Thirty-one of the installed tanks were two-compartment tanks. In 2003, 174 tanks were installed, and 226 tanks were permanently closed. An increasing number of tank installations are at large retail market places with larger, compartmentalized tanks.

As of December 2004 there are 1,837 active LUST (leaking underground storage tank) sites, compared to 2,078 one year ago. LUST sites had a release of product at some point and are now undergoing either assessment or cleanup and moving toward NAR status. There are 4,153 sites that have received an NAR status.

Environmental Assessments

Protection of surface water and groundwater resources are a principle focus for the Iowa Geological Survey (IGS). Reviewing construction permit applications and manure management plans for animal feeding operations (AFO's) comprised a significant

effort for the IGS staff during FY03 and FY04. Geographic Information System (GIS) applications were heavily relied upon to assess the ability of soils and shallow subsurface sediment to accommodate proposed land spreading of nutrients. In addition, IGS staff supplied producers and the DNR's AFO program assessments of AFOs located in particularly vulnerable areas such as karst and alluvial soils.

IGS staff play a significant role in assessing the environmental impacts of open feedlots, and in developing rules for existing and new feedlots.

Rules requiring environmental assessments around leaking underground storage tanks resulted in weekly requests for information on nearby water wells. Approximately 150 well search reports were prepared monthly.

Source Water Protection

In 1998, the Iowa Department of Natural Resources initiated a program called Source Water Assessment and Protection (SWAP). The Source Water program is designed to provide public water supplies with information needed to protect their wells or surface water intakes from contamination. In the fall of 2003, Phase I SWAP reports had been submitted to more than 2,000 public water supplies throughout Iowa. Approximately 300 changes or new public water supplies were added in 2003 and 2004. Phase I SWAP reports were completed for these new or modified public water supplies in the fall of 2004.

Geological Mapping

During fiscal years 2003 and 2004 geological mapping of shallow surficial materials was completed in three counties on the Des Moines Lobe (DML) in central and north-central Iowa (Emmet, Dicksinson, Polk), all of Johnson (including the Iowa City East, Iowa City West, and Tiffin 7.5" topographic quadrangle maps) and part of Scott (McCausland quadrangle). The surficial geologic maps and GIS databases for the Des Moines Lobe area will be used to develop county-specific information for land-use planning and groundwater vulnerability. In addition, several areas of the state are quickly changing from rural agricultural counties to metropolitan areas. These counties face rapidly expanding residential and commercial development. By identifying the types, properties, and distribution of glacial landforms and their associated sediments, the DNR can better predict contaminant fate and transport in shallow groundwater. Geologic mapping of surficial materials provides a better understanding of surficial sediments, ultimately aiding in environmentally sound management and informed land-use planning decisions.

In addition, regional bedrock mapping was completed for southwest and southeast Iowa. Completion of these maps marks the completion of the first comprehensive re-mapping of the states bedrock since the 1960s. The bedrock and surficial mapping will allow the production of an updated version of the states groundwater vulnerability map, and will be used for purposes ranging from source water protection, to water supply, to aggregate production. The geologic mapping program is a cooperative effort with partial funding from the U.S. Geological Survey, and in cooperation with the National Resources Conservation Service-Iowa Cooperative Soil Survey.

Water Quality Monitoring

Based on the vision laid out in the Water Monitoring Plan 2000, monitoring of Iowa's streams, lakes, and groundwater has expanded in several ways. Streams are monitored upstream and downstream of Iowa's 12 largest cities in order to document the impact of urban areas on our waters. Stream sampling continues to track the occurrence of basic water chemistry as well as the presence of nutrients, pesticides, antibiotics, pharmaceuticals, and other synthetic chemicals in our streams. Lake monitoring continued in FY03 and FY04 with the objective of the program being to characterize the water quality in 132 of Iowa's principle recreation lakes. For the first time in 2004, the state began to look at the presence of blue-green algae in Iowa's lakes and whether or not these blue-green algae were producing toxins that can be harmful to humans, pets, and livestock. In addition, beach monitoring on 37 state-owned beaches began in 2000 and continued through the summer of 2004. New in 2004 included the monitoring of bacteria at 35 county-owned beaches.

Since 1992, the Iowa Department of Natural Resources, the United States Geological Survey, and the University of Iowa Hygienic Laboratory have cooperated in a groundwater-monitoring program testing 90 municipal wells from across the state. An additional 60 wells are randomly selected from the various groundwater sources

and added to the annual monitoring regime to provide more information on specific aquifers. During FY04, Iowa's alluvial sources were sampled more intensively. The alluvial aquifers of the state are generally sand and gravel deposits located near the major rivers of the state and are particularly vulnerable to contamination from various land uses. During 2004, groundwater monitoring included the first testing for perchlorate in groundwater. Additionally, in order to better understand the quality of water in specific groundwater layers, new wells must be drilled to isolate the groundwater for sampling. A dedicated monitoring well was drilled in FY03 at Westfield School north of Cedar Rapids in Linn County. This monitoring well nest was located in an area where bedrock is close to the surface and may be impacted by urban land uses.

One of the highest priorities for the water-monitoring program is improving the data management of and access to water quality information in the state. During the FY03 and FY04, the water monitoring data housed in the database called STORET became available through a web-based mapping interface known as the Water Monitoring Atlas. This atlas allows the public to see a map of monitoring sites on the web and features such as roads, cities, rivers, etc. Using the web-based tools a user may zoom into the map, query the database regarding the site name or other site information and hyperlink to the actual STORET database to retrieve the water quality data through the map. As more and more historical and currently collected data is added to STORET, the ability to visualize the state's water quality status will be greatly enhanced.

Nutrient Budget

IGS staff played a major role in estimating inputs and outputs of the nutrients nitrogen and phosphorus for the state and its major watersheds. Estimates of nutrient inputs from sources such as fertilizers, manure, human waste and soil processes, and outputs such as crop harvest and biochemical processes, were derived with the assistance of a variety of agencies and Iowa State University. These were combined with geographic data such as land cover and soil types to create electronic nutrient maps of the state. The concentrations and loads of nutrients in streams were calculated with data collected by the Water Monitoring Program, allowing for comparisons of nutrient distributions and water quality. The nutrient budgets will help the department develop a state nutrient strategy, as directed by the Legislature, and will aid state efforts in water pollution control.

Citizen Monitoring – IOWATER Program

The fast-paced growth of the citizen-monitoring program continues to demonstrate the motivation of Iowans to improve the state's water quality. By September of 2004, more than 1,800 citizen volunteers had been trained in the basic elements of water quality monitoring (Level 1). In addition, volunteers have become involved in community-wide monitoring events called "Snapshot Events" that result in the collection of hundreds of water quality samples over a short period of time (3-4 hours). To date, more than 50 snapshots have been conducted across Iowa increasing the volume of data by thousands of samples and greatly improving our knowledge of the water quality in smaller watersheds.

Geographic Information System (GIS)

The digital and hard-copy versions of the 2002 color-infrared (CIR) aerial photography were acquired in FY03. The digital version was added to our Natural Resources GIS Library and made available to the public for download through our web site and also for viewing through the Watershed Atlas, an ArcIMS application. A new version of land cover was completed for the state of Iowa using Landsat satellite imagery from 2002. The number of land use categories classes increased to 16, compared to 7 categories for the previous version.

Other major projects undertaken during FY03 and FY04 included developing coverages of unsewered communities, drainage districts in the state and animal feeding operations. The Natural Resources GIS Library was also completely redone during this period.

Field Services & compliance

The DNR field office staff are often the first contact the public has regarding environmental issues. They have a strong history of working with individuals, businesses and municipalities, coaching for compliance in wastewater, underground storage tanks, animal feeding, solid waste, public water supplies, air quality, emergency response, floodplains and fish kills.

The six field offices, located in Manchester, Mason City, Spencer, Atlantic, Des Moines and Washington, each cover an approximate 18-county area. Office sizes range from 11 to 17 staff. Field office staff provide assistance and training to many of the professional groups that they work with.

Together they performed more than 24,000 activities in FY03. These activities included more than 6,080 routine inspections, visits and site surveys; assistance to more than 12,150 individuals, businesses and cities; more than 2,300 responses to complaints; 104 fish kill investigations, nearly 1,100 notices of violations (NOV); and 320 responses to spills resulting in 308 spill investigations.

In FY04, 12 FTEs were added to aid in manure management plan inspections, working to bring open feedlots into compliance. During this time period, more than 32,000 activities were performed by the field offices. They included more than 7,610 routine inspections, visits and site surveys; assistance to 17,845 individuals, businesses and cities; nearly 2,200 responses to complaints; 64 fish kill investigations; nearly 1,600 notices of violations (NOV); and 503 responses to spills resulting in 365 spill investigations.

In addition to the field offices, the public, fire departments, local officials, businesses and industries are also served by a 24-hour emergency response number (515-281-8694) to report environmental spills, releases of hazardous materials or manure, wastewater bypasses and drinking water emergencies. The DNR's emergency response and homeland security unit is also on 24-hour call to assist the regional field offices and provide technical assistance to first responders and responsible parties. The unit also works closely with other state agencies in Iowa's homeland security effort.

Conservation & Recreation

Parks, & Preserves

Restoring a Legacy in Iowa State Parks

Repairing, restoring and renovating many of Iowa's finest park buildings, as well as upgrading sewer, water and electric utilities is a continuing effort for the DNR. The Restore the Outdoors Program has been essential to revitalizing these historic structures which represent the essence of the state park system. During the first seven years, 36 parks have seen badly needed improvements to 78 major structures, including the renovation of 15 historic park lodges, 14 picnic shelters and 36 family cabins; the conversion of 10 beach houses for new uses; replacement of nine shower buildings, construction of five new family cabins; the creation of 16 camping cabins, renovation of trails statewide; and the upgrade of numerous sewer, water and campground electrical systems.

Major projects in state parks totaling $4.5 million include:
Beeds Lake *wastewater and water treatment systems*
Ledges *wastewater treatment system*
Springbrook *water treatment system*
Clear Lake *campground electrical upgrades*
Brushy Creek *non-equestrian campground electrical upgrades*
Pine Lake *campground electrical upgrades*
Lake Ahquabi *campground electrical upgrades*
Honey Creek *campground electrical upgrades*
Beeds Lake *campground electrical upgrades*
Mines of Spain Interpretive Center *roof*
Lewis and Clark *docking facility*
Lake Wapello *new two-bedroom cabin*
Marble Beach *shower replacement*
Nine Eagles *beach improvements*
Pine Lake *office replacement*
Banner Lakes *development*
Banner Lakes *boat ramps*
Walnut Woods *new modern rest room*
Viking Lake *new rental shelter/rest room*
Palisades Kepler CCC *toilet renovation*
Pilot Knob *pit toilet replacement*
Stone *CCC maintenance building renovation and house re-roof*

Major road improvements in state parks totaling $4 million include Springbrook, Big Creek, Lake of Three Fires, Lake Wapello, Brushy Creek, Nine Eagles, Walnut Woods, Banner Lakes at Summerset, Pine Lake, Lacey Keosauqua and Bellevue.

Banner Lakes at Summerset State Park – The Newest Jewel in the Iowa State Park Crown

Banner Lakes at Summerset State Park, Iowa's newest state park, is nestled in the rolling landscape between Des Moines and Indianola on Highway 65/69, within minutes of the state's largest metro area. In 1954, the Department of Natural Resources purchased this 222-acre former coal mining site for a wildlife management area. Throughout the years, a number of illegal and rogue activities plagued the area, creating an unsafe and uninviting atmosphere for outdoor recreationists. Through the vision of the DNR and with encouragement from a host of supporters, a plan was developed in 2002 to transform "Banner Pits" into a state park area with new and enhanced recreation opportunities. Those opportunities include: developing a haven for anglers including central Iowa's only trout fishery, crafting a paved bike loop which would run alongside the park roadways, connecting the bike loop to the 12-mile Summerset Bike Trail, creating a premiere mountain biking trail system for beginner to advanced riders and creating a number of shoreline picnicking and fishing locations. The shooting range, which adjoins the park, would be renovated to upgrade range facilities to include sheltered shooting benches and a hard-surface parking lot. Future plans also include a concession operation to manage the range and provide snacks and beverages for range users, visitors and bicyclists. Construction commenced in 2003 with an

anticipated park dedication to occur in the fall of 2004.

Honey Creek State Park Resort – Iowa's First Destination Resort State Park

After completion of a detailed master plan for Honey Creek State Park Resort, site surveys to identify wetlands, high-quality natural features and archaeological resources, and an economic/market analysis by Economics Research Associates of Chicago, a formal "Request for Expressions of Interest" was mailed in May 2004 to approximately 240 private developers. This RFEI sought to establish a partnership with one or more private firms to develop and operate the park. As this process was being developed, work proceeded on the development of 2.5 miles of hiking trails on the site. In addition, a 20-acre parcel has been acquired on which to place the wastewater treatment facility and a 592-acre site adjacent to Sedan Bottoms Wildlife Area immediately east of Exline was acquired to mitigate unavoidable impacts on the park site stemming from its development. Honey Creek appropriations were used for approximately one-third of that 592-acre acquisition. Several private firms expressed interest in the park project, but no formal proposals were received. Project funding proposals are being re-examined in an attempt to devise a package that will yield a true destination state park and that will be attractive to private developers/ operators and to the State. Work continues on design of several spur roads (to maintenance facilities, lake overlooks and cabin access roads) which will be constructed with Park and Institutional Road Funds in 2005.

Interpretation

In 2003, 14 seasonal and full-time staff interpreted Iowa's natural and cultural resources through talks, hikes, demonstrations and programs to approximately 21,300 people across Iowa. Of those, 2,074 people attended programs during the three-day Free Camping Weekend in May. Thirty programs were presented at the State Fair in Des Moines with an average attendance of 25, some exceeding 100. Total numbers of programs and attendees are not yet available for 2004, but 244 programs were given to more than 3,700 people during the regular summer season.

Free Camping Weekend and Explore Iowa Parks

Iowa families were invited, once again, to camp free in state park campgrounds May 2-4, 2003 and May 14-16, 2004, creating an opportunity for families to get back to nature right here in Iowa and hopefully camp on a regular basis. Those who participate in outdoor recreation, whether camping, hiking or fishing, are better stewards of our natural resources. Along with the free camping, the DNR provided a number of interpretive programs throughout the weekend in the parks. Programs included a variety of topics including nature hikes, star gazing, mammal identification, birds of prey programs and fishing clinics. The Explore Iowa Parks camping promotion was expanded in 2003 and 2004 to include all state park campgrounds. The program provided a fun opportunity to campers to explore the diverse parks and campgrounds throughout the state. Participation was easy and campers earned prizes depending on how many participating parks they camped in. In 2003, the three grand prizes included a free year of camping in Iowa state parks, a Trek mountain bike and a Cabela's gift card. In 2004, the prizes included a free year of camping, a camping gear package and 7 nights of free camping in Iowa state parks.

State Preserves

During 2003 and 2004, the DNR web site launched a very informative site for the state preserves system. The Preserves Board officially formed a Friends of the Preserves group to help monitor preserves around the state for any disturbances or management concerns. The Hartman Bluff Preserve in Black Hawk County was approved for dedication and several additional properties have been proposed as new preserves. The DNR's preserves staff continues its research and inventory studies around the state.

Forestry

Iowa's 2.7 million acres of forestland provide more than $89 million in benefits to all Iowans in terms of soil erosion control, air quality and water quality. Ninety-two percent of these oak, hickory, maple and cottonwood forests are under private ownership. More than 20,000 Iowans are employed in the wood products industry bringing more than 40 million in annual economic sales, and providing more than $16 million to private woodland owners each year from the sale of their timber. Efforts of the Forestry Bureau are to sustain and enhance the environmental and economic values of Iowa's forests through private forestry technical assistance, educational opportunities for adults and youth, and demonstration of sustainable forest ecosystem management on public lands.

State Forest Nursery

The DNR's State Forest Nursery, located in Ames, grew and distributed 3.7 and 3.4 million bare root conservation tree and shrub seedlings to private landowners and government agencies in 2003 and 2004 respectfully. Nursery operations are run in cooperation with the Iowa Department of Corrections (DOC) to provide work opportunities for inmates at the Rockwell City and Fort Madison facilities. The DNR has been leasing land from the DOC at the Montrose farm since 1982 and the seedlings produced there provide daily work for more than 60 inmates each year. The State Forest Nursery operation runs on the cost of production and does not use any general tax funds to produce native seed source conservation trees and shrub seedlings. Generated revenue also pays for five additional foresters who provide technical assistance to private landowners who wish to plant new forests or improve existing ones.

State Forests

Iowa's state forest system of 44,000 acres is comprised of four large state forests: Yellow River (NE), Stephens (SC), Shimek (SE) and Loess Hills (W), and range in size from 8,503 to 13,689 acres and 6 smaller units. These areas are some of the largest contiguous tracts of public land in Iowa. They are demonstration areas for sustainable management practices that yield forest products, wildlife habitat, soil and water protection, protection of unique plant and animal communities and outdoor recreational opportunities. Area foresters are mapping forest stands for improved management, to identify and protect sensitive areas and to track forestry practices. Through demonstration forest management efforts Iowa's state forests provided 44,433 board feet of lumber to state agencies worth $51,849. Forests sold 68,359 board feet in 2003 and 121,545 board feet in 2004 to local wood industries providing $25,557 in 2003 and $69,709 in 2004 to the State's general fund.

District Forestry Program

The Bureau's 13 district foresters promoted private lands forest stewardship by providing technical forestry assistance to Iowa's private forest land owners with a focus on conservation of CRP lands into permanent forest cover. Forestry assistance was provided to 1,235 woodland owners in 2003 and 1,682 in 2004, resulting in an additional 43,278 acres in 2003 and 40,328 acres in 2004 being brought under improved forest management. New forest plantings to improve water quality, control soil erosion and enhance wildlife habitat increased by 8,725 acres in 2003 and 5,404 acres in 2004. Iowa's private forest landowners also were assisted with forest stand improvement efforts on 10,543 acres in 2003 and 8,407 acres in 2004. Private lands prairie reconstruction and remnant management assistance was given to 214 landowners involving 7,011 acres in 2004. Training and educational sessions for more than 800 woodland owners and businesses were held each year.

Urban and Community Forestry

The Bureau's urban and community forestry program in cooperation with the Iowa Urban and Community Forestry Council provides technical assistance, education, training, volunteer coordination and recognition to communities across the state. A total of 597 and 600 communities in 2003 and

2004 respectfully received direct urban forestry technical assistance, including completion of 45 comprehensive community tree inventories and management recommendations. Tree City USA, a designation given in cooperation with the National Arbor Day Foundation to communities that meet sustained urban forestry programs, were given to 119 communities in 2003 and to 129 communities for 2004, ranking Iowa 6th in the nation in total number. In cooperation with Iowa State University Extension Forestry, more than 40 one-day workshops on tree planting and care were given each year. In addition, the highly regarded "Community Tree Steward" program, where volunteer leaders get 24 hours of intensive training and give back at least 24 hours in community service, had 24 graduates in 2003 and 32 in 2004, bringing the total to 569 trained volunteers who gave more than 21,000 hours in community service.

The Bureau worked with the Keepers of the Land program and provided matching grant funds to community organizations to plant trees on public areas. A total of $18,000 in state/federal funds in 2003 and $34,392 in 2004 helped 61 community projects plant 2,154 landscape trees in 2003/2004. on local public areas with local governments and organizations matching these funds with more than $121,000.

The bureau continued a partnership with Alliant Energy to establish residential tree distribution programs for Alliant Energy customers to reduce energy costs through the planting of landscape trees. The program called "Operation Releaf" uses a donation from Alliant Energy to hire a coordinator, funds to purchase trees and develop local partnerships with county conservation boards and resource conservation and development areas to supply locally purchased landscape trees at ½ price to allow people to get quality trees to plant on their properties. During 2003/2004, over 43 local projects were implemented and sold 16,800 locally purchased landscape trees worth over $772,800 to 4,814 Alliant Energy customers. In 2004, a similar partnership was started with MidAmerican Energy called "Plant Some Shade", where 7 projects provided 2,750 locally purchased landscape trees to 1,350 MidAmerican Energy customers worth $121,848. A special project to help local residents in the City of Bradgate hit by a May 2004 tornado established 62 trees for 20 residents. Over 56 local nurseries and garden centers in Iowa supplied the plant materials for these projects and received over $900,000 in revenues.

Education

The Trees For Kids program, a cooperative tree education and planting program for elementary and secondary schools completed its 14th year in 2004. Donations and grants for the program were received from MidAmerican Energy, Aquila, Alliant Energy, Iowa Nursery and Landscape Association, Iowa Bankers Association, Trees Forever, Iowa Society of American Foresters, Iowa Tree Farm Program, USDA Forest Service, Iowa Woodland Owners Association, Modern Woodmen Insurance and Iowa State University Extension Forestry.

Trees For Kids and its secondary school companion, Trees For Teens, provides no-cost original education materials to teachers and students and helps them get free trees to plant through local Iowa Nursery and Landscape Association and Iowa Bankers Association members. In 2004, more than 12,079 teachers participated, working with 350,000 Iowa students who in turn planted more than 100,000 trees on school grounds worth an estimated $4.3 million. For schools without room to plant trees, an alternative program called "Reading Rangers" was developed. The DNR planted a tree at one of four state forests for every 20 pages read by students during Earth Week. In 2004, more than 88,250 pages were read and 4,417 trees were planted at Loess Hills State Forest. An Arbor Day Poster contest for 5th-grade students was held for the seventh year, with more than 550 art teachers statewide working with their students. The top three posters were awarded savings bonds, thanks to the Hawkeye Chapter of the Telephone Pioneers. DNR foresters gave 187 different hands on presentations during 2004 involving 5,746 students to establish 873 new landscape tree plantings at schools across the state.

Forest Health

Foresters continue to monitored for serious insect, disease and environmental problems on Iowa's forestlands. Aerial surveys and ground confirmations are conducted. Bureau foresters work with impacted landowners on appropriate salvage and reforestation efforts in areas identified with oak wilt, Dutch elm disease and ash decline. In cooperation with the state entomologists of the Iowa Department of Agriculture and Land Stewardship and the USDA, Bureau foresters assist in gypsy moth

monitoring by placing 900 gypsy moth traps in 38 western Iowa counties and Yellow River State Forest. The bureau also continued a "volunteer" survey program with more than 400 individuals, increasing gypsy moth awareness and expanding survey areas. New forest health efforts involving invasive woodland plant species, surveys for emerald ash borer and white oak decline issues were initiated in cooperation with Iowa State University to document location and severity using trained volunteers.

Fire Prevention

Currently, more than $14 million worth of excess military vehicles and equipment has been distributed and is being use by Iowa's 330 volunteer fire departments for rural fire protection efforts. More than 30,000 pieces of "Smokey Bear" fire prevention materials and costumes were distributed to rural fire departments to expand youth and adult education. In 2003 and 2004 the bureau administered more than $230,000 worth of small wildland fire equipment and clothing grants for 220 volunteer fire departments. In 2004, a new joint effort with the state Fire Marshall's office initiated efforts to help rural communities establish "dry" hydrants to assist in times of fire emergencies, to date a total of 52 hydrants have been installed. The bureau participates in the Big Rivers Fire Compact with Illinois, Indiana and Missouri to improve rural fire protection in the rivers area of the Midwest and to coordinate wildland fire training opportunities for agency fire fighters and to encourage use of prescribed fire as a viable forest and prairie management tool.

Rural Development

Once again the Forestry Bureau partnered with the 17 Resources Conservation and Development (RC&D) areas, to complete the 14th year of the Rural Development through Forestry (RDTF) program. The program distributes more than $50,000 annually in matching federal funds to encourage economic development and promoting the use of Iowa's forest resources. A $4-to-$1 ratio of total economic activity has been generated and more than 850 new or retained jobs since the program began. The Bureau provided 380 and 383 wood industry assists in 2003 and 2004 respectfully. Bureau foresters assisted Iowa private landowners with sustainable timber sales on 2,049 acres annually providing more than 6.1 million board feet of timber for local wood industries.

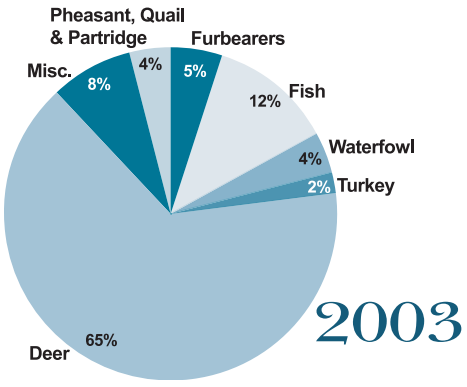
Law Enforcement

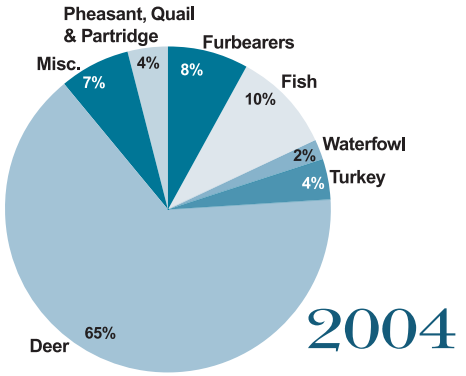
The Law Enforcement Bureau exists to protect the state's natural resources, provide public safety, and educate and serve the public.

During the past two fiscal years the Bureau has faced the challenges of reduced staff with 19 officers retiring and only 12 of the vacancies filled. The reduced numbers in staff has put a much higher demand on officers time since they must cover the vacant territories as well as their own.

Through Iowa's Turn-In-Poachers (TIP) program, a total of 282 TIP calls were processed in 2003 and 195 during 2004 (*see breakdown by species at right*). These private citizens' calls, resulted in 27 cases in 2003 with 85 citations issued, and 29 cases in 2004 and 67 citations issued. Reward payments totaling $7,800 in 2003 and $10,500 in 2004 were approved by the private group, TIP of Iowa, Inc.

Since 1983, Iowa has experience 140 boating-related fatalities, with highs of 11 in one





year and lows of one, however a significant milestone was reached in 2003 when *no* boating-related deaths occurred in Iowa. While good fortune certainly played a part, some credit must go to those working with the boating public in an effective effort of law enforcement and education. A new law was passed in 2003 requiring persons between the ages of 12 and 17 to take boater education in order to operate a personal watercraft (PWC). During the first year, students certified in boater education nearly tripled compared to past years.

Safety and education continues to be an important emphasis of the bureau, with increasing numbers of people reached each year. In FY 2003, a seasonal water patrol officer position was added for Lake Red Rock, bringing the total number of summer officers patrolling Iowa's most popular lakes and rivers to 22. In FY 2004, 4 new positions were created to patrol Iowa's all-terrain vehicle (ATV) parks and trails to ensure safety and ATV law awareness. Since adding these positions, more than 5,000 contacts with Iowa's ATV enthusiasts have been made, approximately 500 resulting in citations. Boaters are now able to take the boating safety course on-line and print a temporary safety certificate and a portion of the hunter safety course may be taken on-line, with only some class attendance required for certification. Additionally, a link off the DNR's Law Enforcement web page allows Iowans to search for any of the available safety classes dates, times and locations by county.

Education and Recreational Classes FY2003

	Hunter Education	Snowmobile Safety	Boating Safety	Fur Harvester	ATV	BOW
Classes Conducted	406	36	15	1	15	15
Students Trained	12,750	419*	1,901*	1*	30	178

**Includes some home-study and internet courses.*

Education and Recreational Classes FY2004

	Hunter Education	Snowmobile Safety	Boating Safety	Fur Harvester	ATV	BOW
Classes Conducted	376	36	20	7	7	6
Students Trained	12,044	499*	2,149*	27*	27	57

**Includes some home-study and internet courses.*

Fisheries

In 2004, the Iowa DNR issued 311,569 resident fishing licenses and 34,050 nonresident licenses. The 2001 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation Report estimated that Iowa licensed anglers participated in 7.5 million fishing trips. The economic value of these trips is estimated at $336 million. The Fisheries Bureau manages Iowa's sport fisheries through stocking, research and management activities. These activities protect, enhance and sustain existing fisheries, create or restore fisheries, promote fisheries resources and create fishing opportunities.

Fish Habitat Improvements

In-lake fish habitat improvements were conducted at 18 lakes. Habitat projects included vegetation control, shoreline riprap, placement of stake beds, pallet structure, broken concrete and brush piles. Habitat projects occurred at Brinker Lake, Lake MacBride, Diamond Lake, Lake Darling, George Wyth Lake, Middle and Lower Sabula lakes, Osborn Lake, Red Haw Lake, Grundy County Lake, Seymour Reservoir, Coralville Reservoir, Lake of the Hills, Blue Heron Lake, Crystal Lake Pond, Bluebill Lake, Fin and Feather Lake and North Twin

Habitat improvement (bank stabilization and bank hides) activities were conducted at 13 trout streams. Improvement projects were conducted

on Bigalk Creek, Paint Creek, South Pine Creek, Spring Falls, Catfish Creek, French Creek, Otter Creek, Richmond Springs, North Bear Creek, Little Maquoketa River, Maquoketa River, Turtle Creek, and Grannis Creek.

Fisheries staff continued to be involved in six major lake restorations efforts. Two lakes projects (Storm Lake, Crystal Lake) involve either lake dredging or planning for future dredging. The Lake of Three Fires dredging project was completed early in fiscal year 2005. Field staff is also involved in private lands watershed management activities of 14 streams and the Lost Grove Lake site.

Intense fisheries management activities included operating sixteen aeration systems at shallow lakes susceptible to winter fish mortality. Applying aquatic herbicide at three lake to enhance shoreline fishing opportunities. A major in-stream restoration plan was complete for McLoud Run, a cold-water stream located with the city limits of Cedar Rapids.

Land Acquisition

The purchase of 120 acres completed the acquisition needs to construct Lost Grove Lake. A 187-acre tract containing 3,200 feet of Glovers Creek was purchased for trout angling.

Stocking

In 2003, the fish culture section produced, reared and stocked more than 127 million fish in Iowa's public waters. This total includes 399,211 trout, 103 million walleye, 1.1 million northern pike, 2.3 million hybrid striped bass and 230,000 catfish. An additional 960,000 fish were stocked into farm ponds. These fish are invaluable in creating and sustaining sport fisheries and fishing opportunities.

Fisheries Research

Research efforts improve fishing through investigations that are directed toward finding solutions to fisheries problems. These solutions are valuable to fisheries biologists in protecting, sustaining and enhancing sport fisheries. A few of the on-going investigations includes watershed assessment of Iowa Great Lakes, bluegill and crappie habitat needs on the Mississippi River, watershed and fish habitat relationships of stream fisheries and better diets for hatchery reared fish.

Public Outreach

Multiple outreach activities were conducted to educate and inform the public of the many fishing opportunities available to them and what the Fisheries Bureau is doing to ensure those opportunities are there in the future. To do this 131 fishing clinics/outdoor classrooms, reaching 6,441 participants, were sponsored or cosponsored by fisheries personnel. Oral presentations were given at 104 meetings of organized groups. The Bureau provided information for 168 newspaper and magazine articles. A total of 235 radio programs and 30 television interviews were conducted. Fishing forecasts were provided to a minimum of 357 newspapers. Two hundred sixty eight tours were given at Fisheries Bureau facilities. Other numerous outreach activities occurred at the State Fair, sport shows, conservation organizations, National Fishing Week events, high school job shadowing and watercraft inspections for detecting aquatic nuisance species.

Fish Mortality Investigations

Thirty one fish kills were investigated during 2003. Twenty one were on public waters. Nine were due to natural causes, two were caused by city sewage, two were manure-related and one was caused by chemical runoff. The cause of fish mortality could not be determined in seven cases.

Resources Monitoring

The Long Term Resource Monitoring Program continued to monitor water quality, fisheries populations, aquatic vegetation and macro-invertebrates in Pools 13 of the Upper Mississippi River. The Aquatic Nuisance Species Program (ANS) monitored 81 lakes in efforts to detect, control and prevent the introduction and spread of aquatic nuisance species. In cooperation with the Environmental Protection Agency the Bureau collected fish from a combination of 19 lakes and rivers for the analysis of tissue to detect contaminants. Creel surveys were conduct at five lakes to assess angling pressure and harvest characteristics. Commercial fishing and turtle harvest data from 28 inland waters and the Mississippi and Missouri rivers was compiled. Fish survey and population assessments on more than 90 public waters were conducted in 2003. Threatened, endangered and special concern fish species

were collected and recorded. All the previously mentioned assessments are valuable in evaluating management activities and developing management plans.

Partnerships

The Bureau assists other DNR Bureaus and has joined associations and formed partnerships with nongovernmental organizations and governmental agencies in efforts to protect sustain and enhance natural resources. The Upper Mississippi Conservation Committee, Mississippi Interstate Cooperative Resource Association, Natural Resource Conservation Service, U.S. Army Corps of Engineers, Iowa State University, Farm Bureau, Soil and Water Conservation Districts, Hungry Canyons Alliance, many city, county conservation boards and lake associations, are only a number of entities that Bureau staff work with to manage aquatic resources.

Wildlife

The Wildlife Bureau's priorities continue to be the development of public wildlife areas, land acquisition and assistance to private landowners in developing and enhancing habitat. More than $2 million of federal funding has been used to acquire wetlands and adjacent uplands. The Wildlife Bureau works to establish native grasses on upland habitats and restore wetlands on private lands. Pheasants Forever, Ducks Unlimited, Iowa Natural Heritage Foundation and others continue to provide additional funding to help the Bureau achieve its habitat development goals.

Seed Harvest Program

Diverse prairie seed was harvested in 2003 by the Native Seed Harvest program. Twenty-two species and 350 pounds of Iowa origin prairie wildflowers were harvested from seed production plots that had a value of more than $44,000. Wildflower seed production is just emerging as the perennial plants in seed harvest plots associated with Department of Corrections facilities are becoming established. This will bring a diversity in plant species the DNR has never been able to afford in the past. The native grass harvest continued despite the ending of the agreement with Pheasant Forever and the United States Fish and Wildlife Service. The focus has been changed to providing diverse Iowa origin seed for Department of Natural Resources land managers. More than 30,000 pounds of seed valued at $600,000 were used to plant more than 3,750 acres of diverse wildlife habitat. Iowa origin focus included harvest of 17,000 pounds of native grass seed from Iowa origin production fields and several prairie remnants in northwest Iowa, including Cayler Prairie. The North American Wetlands Conservation Act (NAWCA) grant continued with more than 400 acres being planted this year with the aid of private contractors on state managed land with Pheasant Forever paying for $5,500 of cleaning services.

Fifty-one species and 935 pounds of Iowa origin prairie wildflowers were harvested from seed production plots in 2004 with a total value of more than $176,000. More than 25,000 pounds of pure live seed valued at $500,000 were used to plant more than 3,000 acres of wildlife habitat. Iowa origin focus includes harvest of 9,000 pounds of pure live native grass seed from Iowa origin production fields. In addition, the Prairie Seed Team provided more than 10,000 forb plugs for three prairie work days across the state. More than 90 volunteers participated in the prairie work days adding much-needed support.

Iowa Private Lands Program

Created in 2000, Iowa's Private Lands Program is a partnership between Iowa DNR, the Natural Resources Conservation Service and Iowa's private landowners designed to increase and enhance wildlife habitat on private lands in Iowa. During FY 2003 the program has assisted 3,526 landowners with habitat improvements on 76,886 acres of private lands. Of these acres affected, 3,479 acres were buffers established along Iowa's rivers and streams and 17,898 acres were wetlands restored in the form of CRP and WRP. During FY 2004 the program assisted 2,103 landowners with habitat improvements on 42,747 acres of private lands. Of these acres affected, 823 were buffers established along Iowa's rivers and streams and 10,636 were restored wetlands. Over the last two fiscal years more than 118,000 landowners, resource

professionals, and conservation partners have been helped through various types of educational programs and informational materials on habitat issues.

Prairie Pothole Joint Venture

Successful partnerships are making it possible to restore wetlands and upland habitat in the 35-county Prairie Pothole Joint Venture area of north-central Iowa. The USFWS, DNR and many county conservation boards were able to acquire and develop 1,921 acres of wetlands and associated uplands in 2003 and 1,246 in 2004. Since 1987, more than 60,000 acres have been placed in public ownership and restored to provide optimum wildlife habitat.

Abundant Wildlife Populations in Iowa

Both resident and nonresident hunters find Iowa a productive state. Approximately 581,792 residents and 61,000 nonresident hunting licenses were purchased to pursue deer, wild turkey, pheasants and other game birds and animals in 2003. Approximately 602,828 residents and 61,820 nonresident hunting licenses were purchased to pursue deer, wild turkey, pheasants and other game birds and animals in 2004. The pheasant harvest bounced back during the 2003 season with 1.08 million birds taken. Iowa continues to rank as one of the top three pheasant-harvest states in the nation. Hunters took 182,000 deer during the fall season and more than 27,000 turkeys during the spring and fall seasons. Hunter success rates for these two species remain among the highest in the nation. 2004 hunting results have not been tabulated.

Wildlife Diversity Programs

The wildlife diversity program continued many activities in wildlife surveys, species restoration, public information, habitat acquisition, research and technical assistance. Wildlife surveys conducted in both FY03 and FY04 included wintering bald eagles, eagle nests, sandhill crane nests, frogs and toads, and breeding birds. Program staff worked with restoring trumpeter swans, peregrine falcons and osprey, and monitored nest success.

In FY03 State Wildlife Grant (SWG) funds, administered by the wildlife diversity program, protected 975 acres of nongame habitat at seven locations statewide; initiated the Audubon Important Bird Areas and ISU Extension NatureMapping programs; and funded research on grassland birds, bobcats, and bird/bat interactions with wind generators. Bird Conservation Area (BCA) status was designated for three selected landscapes, and assistance was provided in hosting seven major bird festivals annually across Iowa.

In FY04, 1,324 acres of nongame wildlife habitat was protected at four locations, including the new Gladys Black Bald Eagle Refuge. SWG funds also were used to initiate a grassland butterfly/habitat research project and an inventory of reptile and amphibians on the Lower Cedar River; reprint the popular *Bats of Iowa* booklet; begin work on a new prairie seed production facility; and expand trumpeter swan restoration work. A State Comprehensive Wildlife Conservation Plan also was initiated to comply with SWG requirements. Three additional BCAs were officially designated, and assistance was provided in hosting eight major birding festivals.

Wildlife Management

Wildlife Bureau field personnel manage 470 public wildlife areas totaling 324,000 acres. In FY 2003 the DNR acquired 20 properties for a total of 4,116 acres. In FY 2004 the DNR acquired 24 properties for a total of 2,181 acres. DNR cost-sharing was used to establish 23 shelterbelts on private land in FY 2003 and 14 in FY 2004.

Leading Iowans in
caring for our natural resources.

Iowa Department of Natural Resources

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